Examining the Feasibility of Implementing a Matrix Model Intensive Outpatient Program in a remote - Alaskan setting

by

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Abstract

Significance

The Matrix Model is possibly the only evidenced-based, intensive outpatient approach for addiction that has been shown to be effective at treating addiction. However, the model has not been evaluated for its effectiveness in remote Alaskan settings, such as Fairbanks, Alaska.

Specific Aim

This study examined the feasibility of the Matrix Model compared to Treatment as Usual (TAU) in Fairbanks, Alaska. TAU is defined as any other outpatient substance abuse treatment (SAT) other than Matrix Model treatment program. The model's philosophy will be examined, and a method for determining its feasibility for implementation in Fairbanks, Alaska, will be outlined. This project will provide a method for an agency to examine their readiness and philosophical compatibility for the Matrix Model. This research intends to explore contextual variables, such as environment, culture, policy, participant barriers, funding, and organizational philosophy.

Methods

This study has reviewed the literature regarding evidence-based, intensive outpatient programs, other treatment philosophies, and the contextual variables that affect program implementation in the literature. Moreover, this study provides an analysis of the Matrix Model versus TAU to help guide a Fairbanks agency considering Matrix Model Intensive Outpatient Program (IOP). IOP is a 12 to 16 week intensive outpatient SAT that meets for 9 or more hours per week that integrates individual, family, and group counseling along with weekly drugs screens.

Implications

This project aims to contribute to the body of knowledge regarding the Matrix Model's effectiveness compared to TAU in remote Alaskan settings.

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The Matrix Model is an evidence-based practice that has been applied and researched in urban and suburban settings for 30 years. Research findings have shown the Matrix Model to be effective in the treatment of individuals who suffer from addiction (Obert et al., 2000). Federal, state, and local reports indicate that substance abuse is a major health concern across rural and populated communities in the United States (Stamm, 2003; Strasser, 2003). Reports reveal that substance abuse has had devastating impacts on rural communities across the United States, Fairbanks being one (Horwath, 2013). As a result of the serious impact of substance abuse in rural communities, the Matrix Model has been implemented in rural areas that include Montana and Wyoming and in remote regions such as Hawaii (Freese, Obert, Dickow, Cohen, & Lord, 2000) that have been affected by substance use. To date, no reports have been published regarding any challenges that may exist with the implementation of the Matrix Model in rural/remote communities, which leads one to question and investigate the contextual considerations affecting the model's efficacy in remote settings and whether or not it is effective in those environments.

Fairbanks, Alaska with all its richness, has a culture of its own. Living in Fairbanks is different from typical rural life in the contiguous 48 states. Fairbanks is a remote and isolated community located in a harsh environment with unique working conditions and subsistence ways of life that make it a distinct place to live (Luke, 1998). Though Fairbanks is one of Alaska's three urban areas, it is remote, isolated, and surrounded by mountain ranges. Fairbanks is an hour plane ride or a seven hour car ride to Anchorage, considering that the weather conditions are good. There is about 359 miles of wilderness between the two cities. Fairbanks serves as a hub to villages within the Interior region. Many residents tend to hold a rural mentality and take pride in

living an "Alaskan" lifestyle (Stamm, 2003). To better understand the need and feasibility of implementing an evidenced-based treatment such as the Matrix Model in Fairbanks, it is important to consider the geographical, contextual, and cultural challenges influencing its implementation.

This project will consider the regional conditions that impact treatment and explore the feasibility of utilizing the Matrix Model in Fairbanks. In addition, efforts will be made to provide a foundation for understanding the Matrix Model over other theoretical approaches currently utilized to treat substance abuse in an outpatient setting. In addition to providing a method for agencies to determine whether the Matrix Model is a good fit, this project uncovers the contextual barriers of rural/remote Interior Alaska aiming to assist providers of the Matrix Model with adapting, modifying, and/or creating strategies around such barriers.

Research Question

The Matrix has been implemented in many cultures and geographic locations around the world. However, researches regarding the effectiveness and feasibility of the Matrix Model in remote/rural regions have not yet been published. Interior Alaska has distinct contextual variables to be considered, such as working conditions, climate and cultural factors. For example, Alaskan work conditions are different than conditions elsewhere. Alaskan employment opportunities range from work in the oil, mining, and fishing industries which require workers to put in long hours and often taking workers out of town for extended periods of time (Luke, 1998). These work schedules conflict with the traditional concept of IOP treatment. This project will consider the implications of this type of employment on a client's ability to receive IOP services, which requires 9 hours of contact per week with the client (Mee-Lee & American Society of Addiction Medicine, 2001). In addition, many Alaskans engage in subsistence

activities warranting considerations regarding ways to accommodate the fishing and hunting seasons that many residents rely upon. Furthermore, regular forty-below zero temperatures, ice winds, and snow storms all pose challenges to treatment delivery (Horwath, 2013). From a cultural perspective, Fairbanks has a diverse Indigenous Alaska Native population (Horwath, 2013). Care must be taken to determine if the Matrix Model is a culturally appropriate form of service delivery or if it will need to be modified.

A thorough investigation of the above issues will produce a guide/workbook for agencies to use in determining their readiness and fit in terms of organizational structure, contextual variables, and environmental factors for implementing the Matrix Model. The guide includes an example of a planning logic model and a blank planning logic model (adapted from the University of Wisconsin Cooperative extension) that an agency can use for their own planning. A logic model is a road map for assessing and planning new program implementation. In addition, as a result of this research, the author has developed 5 cyclical decision matrices which include guiding questions and key points to facilitate reflection on agency fit/readiness for Matrix Model IOP. Lastly, as a result of this study, a process flow model was developed from the research to help an agency determine the feasibility of implementing the Matrix Model IOP.

With the aim of understanding the process of implementing the Matrix Model in remote Alaskan Interior region, the outcome of this project will help agencies understand if the Matrix is a good fit in terms of their organizational structure, mission, and compatibility with the Matrix Model's strict manualized treatment protocol and delivery method. In addition, it will also present the internal and external resources necessary for Matrix Model to become sustainable. Resources from state and federal funding for substance abuse programs, along with how the accreditation standards in the State of Alaska, affect the flow of funding for substance abuse

treatment (SAT). In turn, funding and accreditation of the agency influence the implementation of the Matrix Model IOP and these variables affect Matrix Model IOP implementation. The need for effective substance abuse treatment models that honor the culture of this remote subarctic community and its peoples, the organizational structure and mission of the community's local agencies, and the influence of the state's financial and accreditation requirements give rise to this project, which directly adds to the field of substance abuse and treatment offered in rural and remote settings.

This study has designed a tool for agencies to use for determining if the Matrix Model IOP versus Treatment as Usual (TAU) is more feasible in remote regions such as Fairbanks, Alaska. In sum, the research question guiding this project is: What factors must an agency, seeking to provide substance abuse treatment service in a remote Interior Alaskan community, consider when choosing between implementing the Matrix Model versus TAU.

Literature Review

Philosophical Models/Views

Philosophical frameworks guide and direct psychological modalities including the interventions used in the field of substance abuse. Smith, (1997) explains the fundamentals of psychology's many opposing views regarding an individual's level of responsibility for their problems. The author introduces a vast history of philosophical debates about agency and determinism. Smith explained determinism as the philosophical perspective that for every condition, including the conditions of people, there exist conditions that could cause no other condition (Smith, 1997). The main three factors of influence that are determinative of the conditions and outcomes of people's lives are biological, environmental, and social/cultural determinism. Smith explains that peoples' conditions are external to their will, hence, they

cannot be held morally responsible for their behaviors and life circumstances. Contrary, Slife, Reber, and Richardson (2005) define agency as a person's ability to exercise free will, choice, and responsibility for their life circumstances.

According to Husak (2004), philosophical assumptions have serious implications on societal views regarding recovery from substance abuse problems. These views shape policy, treatment delivery, and how individuals who suffer with substance abuse issues seek help for their problem. For example, an entity viewing addiction from an agentic standpoint may conclude that people suffer from substance abuse due to their choices and that they simply need to make a decision to stop living destructively. The problem is viewed as a moral dilemma and that the person has made poor choices and is ultimately responsible for the outcome.

Moral views have shaped American culture since its beginning (Smith, 1997). The prison and correction system in this country is a prime example of treating addiction from a moral perspective. According to Schoenfeld (2012), over 34% of our prison system's population is incarcerated due to felony drug conviction. This high percentage raises questions about other classified crimes, such as property and violent offences committed as an indirect result of an offender's addiction. The facts that war on drugs and American policy take the stance that addiction and the American drug problem should be treated as criminal, rather than as a medical or social problem, are further examples of how the moral view has further oppressed both the advantaged and disadvantaged people who suffer from addiction (Husak, 2004; Schoenfeld, 2012). However, the moral model and treatment modalities that utilize agentic philosophy have not entirely been ineffective. The model provides sustainability and creativity within an individual compared to the deterministic modalities, which typically treat behavioral symptoms and not the root of a person's issues (Slife et al., 2005). Agentic view hangs in the balance

between blaming the victim and allowing one to take part in the decision-making of their own life.

The deterministic perspective and treatment modalities that pull from its philosophy regard the vast biological, social, and environmental interplay within a person's degree of responsibility (Slife et al., 2005). This view looks for explanations outside the person's volition, such as one's genetics, social environment, and biological factors. It lends itself to many models that treat substance abuse such as behavior activation, cognitive-behavioral therapy, and motivational interviewing (Slife et al., 2005).

According to Prinz and Arkin (1994), in-determinism takes the middle ground between determinism and agentic perspectives. This position comes from the teleological philosophical perspective that people are determined by their goals rather than biological and environmental factors. Smith (1997) described in-determinism as a philosophy that acknowledges deterministic detriments, such as biology and social environment. However, it places more emphasis on one's goals, dreams, and possibilities, which he argued ultimately determines a person's behavior. According to Prinz and Arkin (1994), this stance aligns with Adlerian concepts and 12-step mutual help models. Adlerian concepts pose that humans are determined by goals rather than genetics, culture, and environment. It is from this position that Adlerian principles incorporate an agentic aspect within interventions that allow for one's creativity, responsibility, and possibility to unfold (Prinz & Arkin, 1994). Understanding the philosophy behind treatment models and therapeutic modalities/interventions is necessary to assess the compatibility of agency – model fit.

Models of Substance Abuse Treatment

From the above philosophical vantage points, models have been developed to treat addiction. Modalities that align with agentic philosophy include the moral model, client-centered modalities, and religious interventions. Modalities that align with the deterministic view are the disease model, behavioral models, and medical/pharmacological models to treat addiction.

Agentic philosophy. Modalities that align with agentic philosophy include the moral model, such as client centered modalities and religious based interventions. Individuals prescribing to this type of model view addiction as a sin and that addiction can be overcome by right living, choice, and commitment to one's faith (Husak, 2004). This point of view is not true of all religious substance abuse interventions but common among the large rehabilitation centers such as Teen Challenge (Chu, Hung-En, & Hsiao, 2012).

In addition to religious organizations, the legal system in many regions treats addiction as a crime. Many localities across the United States have been influenced by religious institutions. Criminal codes and laws mostly derive from founding society's moral code of ethics. For example, in every courtroom in the United States, "In God We Trust" appears in writing on the wall. Husak (2004) describes laws were originally established as a result of moral views and then later re-established. Using the 8th Amendment, Cruel and Unusual Punishment, Husak (2004) illustrates the court rethinking the punishment of people for what they are rather than for what they do, a paramount decision in terms of crimes involving addiction. However, Schoenfeld (2012) argues that the war on drugs continues to criminalized substance abuse and that the moral model is still embedded in courts systems across the United States. It is important to assess agentic beliefs within an agency that is considering the IOP Matrix Model.

Client-centered counseling. Client-centered modalities provide an alternative to the moral model. Witty and Adomaitis (2014) note that Rogerian interventions place emphasis on the therapeutic relationship, catharsis, transparency, empathy, and unconditional positive regard. According to Greenberg (2002), emotion-focused therapy is an example of a client-centered intervention that relies on experiential techniques as described above. Client-centered modalities focus on core problems rather than the symptoms.

Client-centered modalities have not been the intervention of choice for SAT because their focus is relational rather than treating symptomatic behavior such as active substance abuse. Because client-centered interventions treat core issues, the modality is better utilized after dangerous addictive behaviors are arrested (Linton, 2005). This modality could conflict with the Matrix Model because of the Matrix Model's stance on treating symptoms of addiction and not the core issues. Experiential based approaches, existential therapy, and Rogerian counseling are all noted as appropriate interventions for use with long-term SAT clients (Osatuke et al., 2005).

Disease model. The most widely accepted and utilized perspective in the field of SAT today is the disease model (Lawrence, Rasinski, Yoon, & Curlin, 2013). The disease model incorporates the biopsychosocial view of addiction. It is widely accepted and has multiple programs and approaches (including the Matrix Model) that have been built upon the framework. Twelve-step mutual support programs subscribing to the disease model and have been well documented in the literature (Kelly & White, 2012; Moos & Moos, 2007). They are based on abstinence and regarded as a viable means to recovery for addiction (Galanter, Dermatis, Post, & Santucci, 2013; Gossop, Duncan & Marsden, 2007). Twelve-step programs, such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA), are two examples of twelve-step peer lead

mutual support groups, and they have demonstrated effectiveness in a multicultural context (Alvarez, Jason, Davis, Olson, & Ferrari, 2009; Moore & Coyhis, 2010).

Harm reduction. The harm reduction approach is also included in the disease model taxonomy. Harm reduction has begun to be accepted and gained attention in the literature (Blume, 2012), particularly among young adults for practicing safe using behaviors such as reducing use, using clean intravenous needles, and practicing responsible drinking behaviors. However, harm reduction takes the philosophical stance for safety rather than abstinence (Rhodes et al., 2006). Based on this stance, harm reduction standouts as a unique model due to abstinence not serving as a primary underpinning of its approach to helping. Medication assisted treatment is an example of a harm reduction intervention and is considered the gold standard in treating opiate addiction (Substance Abuse Mental Health Service Administration [SAMHSA], 2013). According to SAMHSA (2013), opiate drug replacement therapy utilizes Methadone and Buprenorphine, medications developed for treating opiate dependence. The Interior Aids Association (IAA) is an example of a methadone treatment program in Fairbanks. Wakhlu (2009) recommends Buprenorphine, a novel medication assisted treatment, over Methadone because Buprenorphine has an added compound that prevents opiate overdose. Methadone and Buprenorphine are opioids that allow the substance abuser a controlled dose in an attempt to create as "safer" alternative to illicit opiate use. Naltrexone is also used with individuals that suffer from alcohol or opiate addiction (Tonigan & Kelly, 2004). This medication blocks the opiate and alcohol effects and causes the individual to become ill if either substance is consumed (Tonigan & Kelly, 2004). Another medication which is used in the treatment of alcohol addiction is Antabuse. Antabuse is an older drug that was designed to cause extreme nausea when any alcohol is induced. Opiate drug replacement therapy and Naltrexone, though viewed under the

disease model, are consider harm reduction interventions. These are the most widely used pharmacological based treatments used today (Tonigan & Kelly, 2004).

The Housing First program in Fairbanks is an example of a harm reduction program that provides housing and wrap around services for those who are chronically addicted (S. Lee, personal communication, April, 8. 2013). The vision of the program is that by providing basic safety, such as shelter and food, individuals can reset the course of their lives onto a positive trajectory Overall, harm reduction programs consider the quality of a participant's life and rely on occupation, interpersonal relationships, mental health, reduced legal problems, and reduction of public cost as markers and predictors of success. The Matrix Model is an abstinent based program that conflicts with some versions of harm reduction. However, the Matrix Model has been shown to be effective with opiate drug replacement group participants whom were taking the medication Buprenorphine (Rawson et al., 2001).

Aversion therapy. Some of the earliest programs used to treat chronic addiction were therapeutic communities that utilized behavioral modification (Elkins, Dandala, &Whitford, 2010). One such intervention is Aversion therapy. Aversion therapy involves admitting an individual, who is struggling with addiction, into a hospital-based treatment facility. The individual is given drug of choice and at the same time given a medication that induces extreme nausea and sickness with the aim of using operant conditioning so the patient associates the substance of choice with becoming ill (Elkins et al., 2010). According Elkins and colleagues (2010), the Aversion therapy has shown positive outcomes for long-term abstinence. The treatment is typically accomplished over a 90-day period and administered over weekends along post-30-day and 90-day follow-ups (Elkins et al., 2010). Elkins and colleagues report a success rate of 70%. The Matrix Model does not use any components of Aversion therapy.

Comparing three philosophical modalities. Project Match (1998) was a large study that consisted of examining the behavioral oriented intervention of cognitive behavioral therapy (CBT), the disease model oriented intervention of 12-step facilitation, and client-oriented approach of motivational enhancement therapy (MET) in an aim of comparing the best interventions for SAT. Project Match (1998), evaluated MET, CBT, and twelve-step facilitation over a period of 16 weeks. Findings from this study reported that all three interventions were equally as effective. Moreover, it has been noted that these three modalities have been integrated to treat substance abuse (Group, 1998). Additionally, MET, CBT, and twelve-step facilitation are all listed on the National Registry of Evidence-based Programs and Practices (SAMHSA, 2014). The Matrix Model IOP utilizes interventions from MET, CBT, and twelve-step facilitation.

American Society of Addiction Medicine Levels of Care

Inpatient and outpatient treatment are models of care and are designed to use interventions described. According to Levine, Turner, Reif, Janas, & Gastfriend, (2003) inpatient care can range anywhere from one day to two years depending on the program. The American Society of Addiction Medicine placement criterion has established levels of care and their six dimensions for patient care (Mee-Lee & American Society of Addiction Medicine, 2001). Mee-Lee and American Society of Addiction Medicine (2013) list the six dimensions that guide patient level of care as: "dimension 1) acute intoxication and/or withdrawal potential; 2) biomedical condition and complications; 3) emotional, behavioral, or cognitive conditions and complications; 4) readiness to change; 5) relapse, continued use, or continued problem potential; 6) recovery/living environment" (p. 175-176). Classifications of inpatient care are: detox (level 3.4 - 4.0) and extended care, short-term, and long-term residential (level 2.5 - 3.5). Outpatient care can last anywhere from one month to a couple of years depending on the program and

patient need (Levine et al., 2003). Outpatient is classified into early intervention .5, level I, and level II categories of treatment care. Early intervention provides 10–20 hours of prevention/education, Level I provides up to eight contact hours per week. Level II provides nine or more hours contact hours per week (Mee-Lee & American Society of Addiction Medicine, 2001). This paper will focus mainly on level II outpatient service, which is known as intensive outpatient services. Understanding the feasibility of implementing an IOP requires familiarity with the mechanisms of IOP.

Evidence-based Programs and Practices

According to SAMHSA (2015), evidence-based programs and practices listed on their online website database have met NREPP's rigorous research requirements and have undergone independent reviews and ratings for research quality and the portability of the intervention (Matrix Model, 2015). According to SAMHSA (2015), for a program to be listed on the NREPP an intervention must be systematically studied over time and produce findings supportive of positive outcomes. Furthermore, SAMHSA (2015) requires that the program listed be replicated in additional research studies where findings are similar to the original study. The process is time consuming, requires resources, and typically spanned across many years (Matrix, 2015). Most IOP programs do not undergo the rigorous assessment process that the Matrix Model intervention went through with SAMHSA due to funding, time, and program philosophy. These non-evidenced-based programs have been defined as Treatment as Usual (Löfholm, Brännström, Olsson, & Hansson, 2013).

Description of Intensive Outpatient Treatment (IOP)

According to Rawson, Obert, McCann, and Ling (2005), IOP's were designed to enable individuals to successfully incorporate their jobs, community life, and family responsibilities into

substance abuse treatment plans while attending a lower level of treatment care. This model was developed as an alternative to traditional in-patient counseling, which removes individuals from their lives and confines them to residential care from 30 days to 90 days, and sometimes up to two years. IOP provides a higher level of care than typical outpatient services, making IOP available for more serious substance use issues as an alternative to residential treatment and thus, providing a balance of treatment options (Rawson et al., 2005). IOP is an integration of one-on-one, conjoint (individual and/or significant other), and group counseling (Rawson et al., 2005). Many IOP programs include contingency management, urine screening, and family education as part of their curriculum Substance abuse Mental Health Services Administration, Center for Substance Abuse Treatment [SAMHSA], 2006). In addition, IOP programs use an integrated curriculum of psychoeducation, cognitive behavioral therapy, twelve-step facilitation, and motivation enhancement paradigms to address behaviors that contribute to substance abuse (SAMHSA, 2006). Along similar lines, Rawson et al. (2005) notes that a typical IOP program is designed with three days of group counseling sessions per week plus one hour of individual or conjoint couple's counseling per week. In addition, family group sessions or family psycho-educational sessions also occur weekly (Rawson et al., 2005). Understanding the feasibility of implementing an IOP requires familiarity philosophy of the Matrix Model.

The Matrix Model

The Matrix Institute has been providing evidenced-based treatment for over 30 years (Rawson et al., 2005). Alongside the Institute's outpatient substance abuse treatment programs, the Institute has participated in vigorous research studies regarding the efficacy of the Matrix Model. The Matrix Model was developed in the 1980's as an alternative to inpatient treatment. The IOP model was designed so that the treatment participant's work, family, and social life

would not be interrupted as it would be with inpatient treatment (SAMHSA, 2006). Research studies over the past 30 years, has suggested the effectiveness and positive responses of using the Matrix Model in the treatment for methamphetamine addiction (Rawson et al., 2004); cocaine addiction (Obert, et al., 2000; Rawson, Obert, McCann, & Mann, 1986); opiate addiction (Miotto, McCann, Basch, Rawson, & Ling, 2002; McCann, Obert, & Ling, 2003; McCann, Miotto, Rawson, Huber, Shoptaw, & Ling, 1997; Rawson et al., 2001); and, alcohol (Matrix Institute on Addictions, 2013).

In the multi-site study (Rawson et al., 2004), the Matrix Model was investigated across multiple sites at the Center for Substance Abuse Treatment center in Southern California. The study's findings reported high efficacy of the Matrix Model for treating methamphetamine addiction. The study was named the Methamphetamine Treatment Project, which to date is the largest randomized clinical trial of treatments for methamphetamine dependence. The above studies (opiate, cocaine, alcohol, and methamphetamine) illustrate the efficacy of the Matrix Model specific to type of substances.

In addition to the model's utility in treating a variety of substances, the Matrix has been effectively adapted, modified, and implemented across variety of cultural contexts (Rawson et al., 2005). These rigorous studies have allowed the Matrix to be listed as the only IOP model listed on The National Registry of Evidence-based Programs and Practices (NREPP). The registry is a database of well-researched interventions deemed appropriate as best practices for mental health and substance abuse treatment. The registry is available online and is an open source funded by the Substance Abuse and Mental Health Services Administration (SAMHSA, 2015) under the umbrella of the U.S. Department of Health and Human Services.

Treatment as Usual

Treatment as Usual includes non-specific treatments described as any intervention used in treating substance abuse delivered using various standard care protocols (Löfholm et al., 2013). Examples include clinical management, counseling, psychotherapy, mutual-help programs, psychopharmacology, medicated assisted treatment, and psychoeducational services that meet the standards of the comparator's intervention (Löfholm et al., 2013). In the case of this project, TAU is operationalized as other non-Matrix IOP's or outpatient programs and interventions, which include substance abuse treatment, in their curriculum.

Matrix Model vs Treatment as Usual

As described above, the Matrix Institute has been providing treatment for 30 years. According to Rawson et al., (2005), the Matrix Institute developed the Matrix Model in the 1980's in response to the outpatient treatment needs of Southern California. The Institute consists of researchers, clinicians, and consultants who have researched and reworked their treatment model, which presently uses a combination of the best practice interventions for their outpatient treatment curriculum. The Matrix Model integrates cognitive behavioral therapy components, motivational enhancement frameworks, urine analysis, contingency management, twelve-step/mutual-help, spirituality, and psychoeducation for their treatment structure (Rawson et al., 2005). TAU is different by the way that the curriculum is developed with components and interventions that the agency chooses based on their preferences. Contrary, Matrix Model IOP curriculum is prepackaged in a manual and delivered with fidelity over a suggested 16-week time period.

Rawson and colleagues (2005), report that the Matrix Model theory was built upon the theory that purports addiction as a treatable disease. The protocol incorporates the

biopsychosocial view of human functioning and recovery with emphasis on addiction as a brain disease (Obert et al., 2000; Rawson et al., 2005). Based from the stance that addiction is a treatable disease, the Matrix adheres to abstinence based philosophy. The program has the flexibility for medicated assisted treatment (psychopharmacology) and opiate drug replacement therapy (Methadone and Buprenorphine) to be incorporated into the treatment curriculum (Rawson et al., 2001). Based on the interventions within the Matrix, its philosophy, and manualized treatment protocol, the Matrix would be categorized as adhering to a deterministic perspective of a disease model that utilizes behavioral and medical interventions (Rawson et al., 2005). The Matrix Model's measurable behavioral framework and mandatory weekly urine analysis have enabled researchers to study and validate it as an evidence base practice allowing it to be the only IOP listed on NREPP (SAMHSA, 2014).

According to Matrix (2006a), the model has a history of being adapted across cultures and geographically. Rawson et al. (2005) notes that the model has been used to treat co-occurring disorders and is effective with participants who are mandated to treatment. Moreover, the authors describe its highly structured manualized protocol allowing for collaterals (probation and drug courts) to track participants' recovery process and plan treatment. According to SAMHSA (2015), the Matrix Model is recognized globally and viewed as trustworthy among shareholders who invest and place trust in the treatment and its delivery to consumers.

The Portability, Readiness, and Matrix Model as a Validated Treatment

Many states are only contracting and referring to agencies that provide the Matrix Model IOP curriculum (Matrix, 2015; Rawson et al., 2005). Currently Alaska is considering this idea and is conducting a pilot study to examine if the Matrix Model's treatment protocol is effective in an Alaskan context (B. Bishop, personal communication, November, 2, 2014). If the pilot

study has positive findings, the State of Alaska may decide to contract with agencies that provide the Matrix curriculum. This project is the only one to examine the feasibility of implementing the Matrix curriculum in Fairbanks and the Interior regions of Alaska. The application aspect of this project could inform state policy makers to rethink the decision to require agencies to only use the IOP Matrix Model intervention. Furthermore, it offers a framework to help agencies consider the fit of the model to their repertoire of services and contextual considerations. As described above, the Matrix Model is the only outpatient SAT program that has been researched well enough to be listed as NERRP (Matrix, 2015). However, studies have compared the Matrix Model to TAU (Obert et al., 2000; Rawson, 2004) and these findings have shown that the Matrix Model participants have better treatment engagement and completion rates compared to participants who attend TAU.

Cultural Adaptations

According to Rawson et al. (2005), Matrix has been implemented across various geographic locations, languages, and cultures. According to SAMHSA's National Registry of Evidence-based Programs and Practices (SAMHSA, 2014), the Matrix has been implemented internationally in Islamic countries such as Beirut and Lebanon; in Asian countries such as Thailand (Matrix Thai version, 2006d); among Spanish-speaking populations (Matrix Spanish version, 2006c); including culturally designed handouts for American Indians/Alaska Natives (Matrix AN/AI version, 2006 a); translated into Slovak (Matrix Slovakian version, 2006b), and among gay and bisexual populations (SAMHSA, 2014). The model has been used in various rural communities across the United States but investigations or outcome data have yet to be published. To briefly summarize, it appears that the Matrix Model is supported as an evidence-based treatment modality to treat substance abuse, with large randomized controlled multisite

studies, showing the model's strength in treating stimulant addiction. In addition, the model is being adapted to treat many diverse groups in terms ethnicity, geography, and language. Therefore, it warrants investigating 1) the need for this type of treatment in Fairbanks, a remote-Alaskan setting, 2) adaptability of the model to the Fairbanks community, and 2) the feasibility of implementing the Matrix Model IOP in the remote Interior region of Alaska.

Rationale

Epidemiology of Substance Abuse in Alaska

Historically, Alaska has some of the highest rates of alcohol addiction in the country. Horwath (2013) cited data from the Alaska Department of Health and Social Services (2013) in a conference report that indicated alcohol abuse among Alaska residents was as much as twice the national average. Recent state epidemiological data has suggested spikes in pharmaceutical opiate abuse and non-pharmaceutical abuse, such as heroin, in both rural and populated areas (Alaska Department of Health and Social Services, 2013). Moreover, according to the Alaska Department of Health and Social Services (2013) these state reports indicate that substance abuse is related to premature deaths in Alaska. Substance abuse was related to nine out of the ten top leading causes of death in Alaska. From the years 2007 to 2011, the Alaska Department of Health and Social Services reported a total of 18,130 substance related deaths of which 1,980 were in the Fairbanks North Star Borough.

The Alaska Department of Health and Social Services (2013) noted that The Alaska Bureau of Vital Statistics (2013) published data that revealed Alaska Native people experience the highest rate of alcohol induced death. For example, data from the Alaska Bureau of Vital Statistics reveals that from 2007 to 2011, nearly one of every 13 Alaska Native deaths was alcohol induced and has been noted among Alaska's most serious health and social concerns.

Substance abuse has been well documented in the literature as a leading factor in social determinants of health such as suicide, domestic violence, crime, poverty, and an overall break down of communities (Alaska Department of Health and Social Services, 2013). Moreover, literature (Gone & Calf Looking, 2011; Whitesell, Beals, Crow, Mitchell & Novins, 2012; Mohatt et al., 2004) supports the reality of the social determinants regarding substance use among Alaska Native people. These statistics, combined with support from the literature, provide a strong case for appropriate intervention programs such as the Matrix Model in Alaska.

Lastly, data from the 2011 Annual Drug Report by Alaska Bureau of Alcohol and Drug Enforcement, suggest that Fairbanks's North Star Borough's current problem substances are alcohol, cocaine, heroin, methamphetamine, marijuana, and pharmaceuticals (as cited in The Alaska Department of Health and Social Services, 2013). The evidence suggests a need for IOP substance abuse services in Fairbanks.

The Need of Substance Abuse Services and IOP in Fairbanks

Fairbanks community leaders report that substance abuse is one of the region's most chronic problems (Horwath, 2013). This projects research was based in Fairbanks, Alaska. Fairbanks is part of the Interior region and is defined in this study as a remote location due to its geographic and demographic isolation. The remoteness of Fairbanks has put a strain on the options, opportunity, and delivery of treatment services for those in need. Residents of Fairbanks and Interior Alaska often need to leave the area for substance abuse treatment due to the lack of resources, long waitlists, and basic unavailability of services (Horwath, Gifford, & Ford, 2014). Due to Fairbanks's remoteness, it is hypothesized that the region may have contextual or cultural considerations in terms of program implementation among the individuals who need substance abuse services and the agencies that provide the services (Horwath et al., 2014).

One concern with the Matrix Model is its rigid manualized treatment protocol (Matrix, 2005). Adhering to the model with fidelity is stressed throughout the initial two-day training, the key supervisor course, and the treatment manual. The developers and trainers of the Matrix Model repeatedly speak to the importance of not deviating from the manual in aims of preserving treatment/dose fidelity. The unique needs of Fairbanks residents and the cultural diversity of the community could present challenges to implementing such a rigid manualized treatment modality.

To examine the feasibility of implementing the Matrix Model IOP, a program development and evaluation framework outlined by the University of Wisconsin-Extension (2010) can be utilized. This model provides the framework for the logic model, which facilitates investigating the feasibility of an organization's capability of implementing the Matrix Model. It outlines planning, staffing, infrastructure, reimbursement issues, participant barriers, cultural appropriateness, and overall organizational appropriateness/readiness for considering the model. Since the purpose of this project is to assist agencies with determining the feasibility of implementing the Matrix Model, the findings from this effort with a local agency and the tools created to guide this investigation are explained throughout the project and provided in the appendices.

A program action - logic model proved to be an effective method for planning an IOP program in this local agency. Though this project introduced methods for implementation, its primary focus is on the planning of an IOP program, specifically a feasibility study. As such, the researcher of this project will be working as an employee with a local Fairbanks agency. Thus, a participatory observation/evaluation approach was used as a method to gather information to better understand the nuances of planning the implementation of the Matrix Model. The

participatory evaluation approach has been found to be an effective method to use when planning (Jason, Davis, & Ferrari, 2007; Schaub, Sullivan, Haug, & Stark, 2012) and for program development with community-based agencies (Suarez-Balcazar & Harper, 2003). The above approach is intended to empower agencies and consumers (Rossi, Freeman, & Lipsey, 2004). A logic model intends to highlight the implementation challenges that could be overcome or avoided.

Implementation Considerations

Implementation of the Matrix Model in Alaska

The Matrix Model has been implemented in rural and out-lying areas both nationally and internationally (Rawson et al., 2005). However, there have been no investigations or published reports on the effectiveness of Matrix in these areas. According to The Center for Substance Abuse Treatment (CSAT) coordinator in Alaska, Brita Bishop (B. Bishop, personal communication, November, 2, 2014), the Matrix Model has been implemented in Nome, Alaska, with the Behavioral Health Services at the Norton Sound Health Corporation, in Fairbanks, Alaska, with an adult population at Hope Counseling Center (Hope Counseling Center IOP Matrix Program, 2014), and at the Volunteers of America's adolescent program in the Anchorage, Alaska. As a gesture of brevity regarding the States desire to only use Matrix Model IOP's, on August 2014, the Alaska Mental Health Trust provided a grant for Matrix training and certification paid by the Trust in Anchorage substance abuse counselors at a twenty-five hundred dollar per person cost. Contrary, there have been no investigations of the model's efficacy and outcomes pertaining to its ability to adapt to the cultural norms and contexts of the region. (B. Bishop, personal communication, November, 2, 2014).

It was also indicated by Bishop that since the Matrix Model is listed on the Substance Abuse and Mental Health Service Administration's National Registry of Evidence-based Programs and Practices (SAMHSA, 2014), the State of Alaska likely intends to contract solely with agencies that use the Matrix Model (B. Bishop, personal communication, November, 2, 2014). For example, the wellness court in Fairbanks, the organization that handles the felony offenders (3rd driving under the influence or operating under the influence violation), issued a request for proposals specifying that agencies using the Matrix Model submit a contract proposal to the court and State of Alaska to provide services to offenders. Furthermore, during an interview with the Fairbanks wellness court offender coordinator, Janice Lorenzen, it became apparent that the State of Alaska is moving toward the policy of contracting only with programs that provide evidenced-based programs such as the Matrix Model (J. Lorenzen, personal communication, October, 15, 2014). These experiences and tools generated through completing this project offer program administrators essential information and resources to determine the feasibility of Matrix implementation; understand, detect and avoid common mistakes; and inform policy.

Implementation of the Matrix Model in remote Alaska

The first step involved in understanding the Matrix's fit within a rural Alaskan context, specifically in a remote setting, requires a thorough understanding of the culture. According to Howard (1998), the Interior of Alaska, which includes Fairbanks, has a unique culture of its own. For example, the region is the home to various cultures (Trimble & Clearing-Sky, 2009). The Athabaskan peoples have inhabited the Interior for over 2,000 years. Fairbanks serves as a transit hub and is an access point for medical services and supplies. In addition to Athabaskan

peoples, Yupik, Inupiaq, Tlingit, Haida, and Aleut, Alaska Native peoples also reside in Fairbanks, creating a diverse Indigenous cultural make-up within the region (Kawagley, 2006).

Fairbanks also attracts people from all over the world. It is comprised of a large South East Asian community, Latino community, Scandinavian population, and an array of other diverse ethnicities and cultures (Howard, 1998). Fairbanks is the home of an Army post and Air Force base, which further add to the diversity of the community. There is a European American population that has been in the region for multiple generations (Howard, 1998). Lastly, The University of Alaska brings a unique culture to the region. Fairbanks is a town of opportunity that attracts a diverse ethnic and cultural demographic its people have an overarching cultural worldview, which includes an independent mindset, appreciation for autonomy, Alaska Native values, unique occupations, and subsistence activities that are present throughout the Interior.

In addition to diversity, Fairbanks residents embrace a strong rural worldview, lifestyle, and way of being. Stamm (2003) explained that rural communities face barriers that differ from their urban counterparts, and she identified differences in which rural community members think, view, and make sense of the world. Stamm argues that the rural life fosters a value system and rural mindset consisting of self sufficiency, a general lack of trust in mental health agencies, governmental skepticism, a moralistic viewpoint, and overall religious influences common among rural communities. It is clear that the Matrix has a history of adaptability in a multitude of cultural populations.

This project's application provides guiding questions and key points to assess cultural considerations, identifies potential participant barriers, and provide a guide for agencies to evaluate their organization's flexibility to make adaptions to the Matrix Model. Lastly, the

project identifies essential infrastructure and compatibility for an agency to be philosophically and structurally situated to implement an IOP program such as the Matrix.

Fairbanks, because of its remoteness, presents challenges for Matrix IOP implementation due to the model's rigid treatment protocol. Participant barriers include both those common to all settings such as agency philosophical approach, treatment funding, and participants ability to pay, as well as those specific to a remote Alaskan communities as well as: 1) workers, with complex scheduling, who leave for extended periods to work in the oil, mining, armed forces, and fishing industries; 2) harsh weather and environmental conditions that affect mood and transportation to get to treatment; 3) cultural appropriateness (Alaska Native cultures and Alaskan White remote mentality) and subsistence activities such as fishing and hunting; 4) agency resources; 5) participants' ability to afford treatment; and, 6) an agency's philosophical approach to service delivery. In sum, this project examined the feasibility of implementing the Matrix Model IOP considering the above-mentioned challenges. This project provides a decision making model for an agency that might be considering implementation of the Matrix Model. Furthermore, it provides assessment methods to help an agency identify participant barriers, the adaptability of the model to the cultural context, and addresses the readiness of an agency to implement such a program.

The Matrix Model has a manual for American Indian/Alaska Native peoples. However, the manual is not an exhaustive reference for every specific Native tribal organization. The manual serves as a general outline for indigenous practice. An agency considering the Matrix Model should be flexible and knowledgeable about Alaska Native populations in the Interior and throughout Alaska. They should employ qualified alcohol and other drug abuse (AODA) clinicians that can competently deliver Matrix IOP in an Alaskan context.

The above concept is also true for the other non-Native populations of Fairbanks. In rural areas there is a psychological stigma for help seeking behavior (Stamm, 2003). Agencies need to be aware of such barriers that stand in the way of participants seeking treatment. Furthermore, though outside the scope of this project, agencies need to have protocol in place to address and reduce stigma. For example, the gatekeepers to SAT in the Interior need to know how to contextually relate, refer, assess, and provide an intake with individuals seeking treatment. Another example is among the Interior's large military population. It is known that the military imposes harsh penalties on personnel that abuse illicit substances (Substance Use Disorders in the U.S. Armed Forces, 2015). Establishing a method that navigates help seeking behavior and channels for military to receive SAT would be beneficial for an agency considering Matrix IOP since there is a number of military installation in remote Alaska.

Along similar lines, agencies need to consider the work conditions of the residents of Interior Alaska. Conflicts with work and treatment schedules are an issue in Fairbanks. Matrix IOP was designed for 9 plus hours of on-site intervention per week, often making such a program not practical for a large percentage of the Fairbanks and Interior Alaska workforce.

Lessons Learned

A qualitative participant observation methodology was used in a community-based counseling setting in Fairbanks in order to understand the process of an agency transitioning from a TAU to a Matrix Model program. This method of inquiry provided an excellent way of gaining familiarity with the Matrix Model and identifying the nuances of program planning, determining factors affecting implementation, and assessing the feasibility of transitioning a TAU intensive outpatient program to a Matrix Model IOP. Furthermore, the method helped examine the research question in terms of real-world experience, bridging the gap from the

conceptual to the applied. This project allowed the researcher to engage in "action oriented research" and yield a product adding to academic literature and the field of SAT through descriptive analysis of an actual transition and implementation from this effort.

The first point brought home to this researcher is that the agency needs to have a compatible philosophy with the Matrix Model. For example, the agency's mission and values directly reflect their views on addiction and substance use. It is not uncommon that faith-based agencies view addiction and recovery from substance abuse from a moral perspective. For the Matrix Model, it is best that the agency's philosophical approach is compatible with the disease concept of addiction.

The next lesson learned was that implementing the Matrix Model requires understanding the mandates needed for operating an IOP. Alaska requires agencies that provide SAT to be nationally certified through accrediting bodies such as Commission on Accreditation of Rehabilitation Facilities (CARF) (M. Powell, personal communication, September, 17, 2014). If the agency does not have or does not plan to pursue national accreditation, TAU should be considered since the investment in the Matrix Model IOP may not be sustainable. National accreditation is needed to obtain regional, state, and federal resources to support affordability of the program to its participants and stakeholders.

Lastly, this action-orientated research also revealed participant barriers that affect IOP treatment delivery .Thus, having a plan to address participant barriers such as the rural/remote Interior Alaska work conditions and schedules, the negative psychological stigma of people seeking help for SAT in the Interior Alaska, the affordability of SAT services, and cultural competency of agency staff have been noted as necessary factors for successful implementation of the Matrix Model program. Adaptations to address the barriers include: the agency's cultural

responsiveness, treatment planning that takes into consideration environmental factors such as extreme weather conditions, IOP affordability for clients, and novel ways to address treatment delivery for Interior Alaska work conditions which require employees to leave home and work long shifts.

These findings are congruent with literature (Horwath et al., 2014; Plested, Smithman, Jumper-Thurman, Oetting, & Edwards, 1999; Stamm, 2003; Strasser, 2003) regarding the complexity of providing rural mental health services and participant. As a result of these lessons learned, a guidebook was developed for agencies to use when considering the Matrix Model IOP versus TAU in Interior Alaska.

Community Readiness Model

The community readiness model was developed by Edwards, Jumper-Thurman, Plested, Oetting, and Swanson (2000), and it was used to help communities, organizations, and non-profits determine readiness for new programs within their established infrastructures. The model has proven effective in planning of HIV/AIDS intervention programs (Plested, Edwards, & Thurman, 2007), examining the readiness for substance abuse intervention in rural communities (Plested et al., 1999), and within organizational contexts for marketing (Kelly et al., 2003). It provides the necessary foundational community readiness questions, which were adapted for the cyclical decision making framework developed as a result of this research and provided in this project's application. The questions adapted from the community readiness model have been built upon research used in a variety of settings, including rural substance abuse programming. As such, the adapted guiding questions are a vital tool for assisting agencies with decision making in regards to substance abuse service delivery with the Matrix Model or TAU.

For this project, guiding question were developed and adapted from the community readiness model. These guiding questions were designed to complement the cyclical decision matrices. The first step in developing the cyclical decision matrices was to adapt questions from the community readiness model to define a community. For example, the community may be an outpatient center, substance abuse treatment center, agency, or organization. The next step involved-providing grounded questions that promote exploration and thought about an agency's philosophy, mandates, resources, and potential participant barriers.

Application

Analyzing the context

Yogi Berra said, "If you don't know where you are going, you will end up somewhere else" (Yogi Berra Quotes, n.d.). As such, it is recommended that when considering implementing the Matrix Model, a useful tool to help navigate is a program action logic model. This tool allows logic to guide the planning process and uses a flow chart of inputs, outputs, and program benefits or outcomes (University of Wisconsin- Extension, 2010).

Program action–logic model. Taylor-Powell and Henert (2008) pose that a program action – logic model serves as a "roadmap" for an agency to plan and implement a new program within an existing agency. The model uses a charting system of inputs.

Inputs. Inputs are the resources an agency invests in a program. Examples of inputs include the agency's staff, time, materials, money, space, partners, and research base that an agency invests into a new program (Taylor-Powell & Henert, 2008).

Outputs. In addition to the inputs, the model addresses program outputs. Outputs are the activities and services an agency would provide within a new program (Taylor-Powell & Henert, 2008). Outputs are broken in two categories: what the program does and who the program

intends to reach (Taylor-Powell & Henert, 2008). Examples of what the services are that the Matrix Model IOP provides includes substance abuse treatment services, urine analysis, contingency management, individual/group counseling-and training of Matrix Model providers. Examples of who the Matrix program reaches includes the clients who seek substance abuse services, policy makers, state and local area communities, researchers of best practices, and other agencies that provide referrals for substance abuse treatment (Taylor-Powell & Henert, 2008).

Outcomes. Program outcomes are a direct result of inputs and outputs and a primary focus of key stakeholders. Outcomes consist of the change or benefits that result from the program's activities and services, which are guided by specific program goals (Taylor-Powell & Henert, 2008). These outcomes can be divided into short-term, mid-term, and long-term goals. Examples of short-term goals for the agency considering the Matrix Model include initiating program planning around delivering substance abuse treatment services; assessing and addressing organizational attitudes regarding people who struggle with addictions and the delivery of substance abuse services; and assessing participant barriers to treatment addressing SAT affordability, cultural fit/flexibility, participant work schedule conflicts, and environmental factors such as extreme temperatures. Examples of mid-term goals for an agency considering the Matrix Model include the developing policies that help combat the stigma of addiction that raises community awareness, and creates affordable SAT for Alaskan substance abusers. Examples of long-term goals for an agency considering the Matrix Model include contextual adaptions addressing Alaska Native, Rural White Alaskan, and military cultures, and providing sustainable evidence-based IOP substance abuse services to the Fairbanks community (Taylor-Powell & Henert, 2008).

Situational Analysis

However, before inputs, outputs, and outcomes are considered, Taylor-Powell and Henert (2008) suggest exploring the overall situational needs, which the authors define as a situational analysis. According to Taylor-Powell and Henert (2008), situational analysis is an examination of the current needs and assets of an agency. Priority setting is an essential part of the process involving decision-making for the program's primary areas of emphasis and focus. Finally, the action-planning phase aims to create a conceptual snapshot of the potential benefits and liabilities of implementing a new program and how the new program could affect the clients, agency, community, and public policy. Assumptions and external factors are also noted.

Assumptions. Taylor-Powell and Henert (2008) explain "assumptions are the beliefs we have about the program; the people involved, and how we think the program will work" (p. 15). Assumptions are ideas about the problem and the way the program will function. Furthermore, Taylor-Powell and Henert indicate that assumptions are "what the program expects to achieve, how the participants learn and behave, the resources and staff, the external environment, and the internal environment" (p. 15). Assumptions are the beliefs that an agency has about what their organization does and how they do it.

External factors. External factors are the influences outside of the program that influence an agency's culture, dynamics, and operations. Taylor-Powell and Henert (2008) provide examples of external factors as being "the local culture, public policy, mission, and mandates" (p.15). The authors pose that the local community, politics, and policy regarding SAT be considered because they may influence SAT services since they are the "elements that can affect a program over which there is little control" (Taylor-Powell & Henert, 2003 p.15).

Designing the Action Plan

Priorities should be considered by the agency personnel in terms of compatibility and fit of the Matrix Model. The agency's missions, values, vision, mandates, philosophy, competition, collaborators, resources, and community dynamics all impact the feasibility of successful sustainability of Matrix Model implementation. Once these priorities are aligned and deemed compatible, further planning, logic modeling, and program implementation can proceed. Appendix B provides an example of a program action – logic model (Taylor-Powell & Henert, 2008). Appendix C provides an example of a blank program action – logic model format for agency personnel to assess their organization (Taylor-Powell & Henert, 2008). These logic models were adapted from The University of Wisconsin-cooperative extension. Furthermore, 5 cyclical decision matrix diagrams were developed as a result of this research and are included in Appendix D. These cyclical decision matrix diagrams utilize data from program action – logic model to help determine if the Matrix Model is a feasible model for an agency's service delivery in the Fairbanks region. The cyclical decision matrices act as a guide for an agency's decision-making process regarding implementation of the Matrix Model versus providing TAU. Additionally, the cyclical decision matrices incorporate guiding questions and key points extrapolated from the community readiness model that facilitate agency personnel engaging in a step-by-step thought process regarding readiness to implement the Matrix Model (Edwards et al., 2000). Lastly, based on the cyclical decision framework and the program action - logic model concepts, a flow chart was developed by this research and included in the product of this project to serve as tool to aid in program planning, assessment of feasibility regarding use of the Matrix Model versus TAU, and agency readiness to engage in implementing the Matrix Model IOP (Taylor-Powell, Steele, & Douglah, 1996; Taylor-Powell & Henert, 2008).

Cyclical Decision Matrix Diagrams

The cyclical decision matrices provide five diagrams which are used to help agencies that are considering the Matrix Model IOP. All five of the decision matrix diagrams were developed through the efforts of this research. Each model offers agency personnel guiding questions and key points that serve as stepwise mechanisms for assessing their agency's readiness and suitability for implementing the Matrix Model. Below is a list of steps that the cyclical decision matrixes' provide:

Operationalizing the Organization

1. The agency providing substance abuse services is operationalized as any organization, agency, or center that provides or plans to provide substance abuse services in Fairbanks or the Interior region of Alaska.

Unpacking the Organizational Philosophy

1. Philosophical views are discovered within an agency's statement of mission, values, and mandates. Once the type of organization is operationalized, the model suggests developing a clear articulation of the agency's philosophical approach to service delivery. The agency philosophy considers organizational structure, staffing, and clinical expertise of clinicians. During this process the agency examines their worldviews, beliefs about how knowledge is acquired and change manifests, understanding about the balance of responsibility of behavior, perspectives on where and how people arrive at milestones in their recovery.
2. A clear understanding of the agency's mission is developed**.** According to John Bryson (2011) in Strategic Planning for Public and Nonprofit Organizations, mission

delineates an agency's purpose and provides an understanding about the organization's goals, why they exists, and the mechanisms used to achieve their goals.

3. The agency's vision is illuminated. Bryson (2011) also explains that vision clarifies what the organization should look like and how it should operate as it fulfills its mission. Vision often includes the agency values. Agency values are those values that reflect agency's beliefs about how things should get done. Members of an agency should relate to the agency values and be part of a group conscious about how the values are administered. All employees within an agency generally believe in such values, usually agree with them, and are a part of the process of developing them (Bryson, 2011).

Discovering SAT Mandates

Bryson (2011) explains that mandates are requirements an agency is officially and unofficially responsible for meeting in order to comply with outside authorities. Official requirements are likely to be found in laws, ordinances, articles of incorporation, public policy, and the policies and procedures of an agency. Unofficial mandates may be embedded in the cultural norms of the agency and key stakeholders (Bryson, 2011). Below is a list of steps that the cyclical decision matrices provide:

1. Agency leaders determine if the agency is required by the State of Alaska to have a national accreditation to provide SAT such as the Commission on Accreditation of Rehabilitation Facilities.
2. The agency's billing mechanism must be considered. Discussion regarding how the agency submits billing, such as a facility or office-based provider, need to occur.

3. Agency leadership needs to generate ideas regarding plans for maintaining credentialed counselors. Furthermore, leadership should assess the current status of and need for substance abuse counselors and credentialed Matrix Model counselors employed at their agency.
4. Decisions about whether the agency wants to pursue or is required to become credentialed as registered Matrix Model site must be made.

Examining Agency Resources

The availability of local, regional, statewide, and national resources will greatly influence the ability of Interior and Fairbanks SAT agencies to implement the Matrix Model IOP. Fairbanks has an identifiable need for substance abuse services. However, resources are limited due to lack of state funding for such services. Below is a step-by-step list of considerations of possible resources:

1. Due to this lack of funding, agencies must rely on insurances, private/self-pay, and local linkage agreements. Sufficient time must be allowed for the development of the resources that are needed to carry out a sustainable and effective Matrix Model IOP. The community dynamics and politics also influence this process. When planning, agency leaders are tasked with ensuring a solid foundation is established for community support and payment for services rendered (self-pay, probation, OCS, and insurance providers).
2. Regional contracts with Indian Health Services, borough, employee assistant programs, manage care organizations, Tricare, and the University of Alaska Fairbanks. Regional contracts with Indian Health Services, borough funding opportunities,

employee assistant programs, manage care organizations, Tricare, and the University of Alaska Fairbanks serve as potential funding mechanisms.

3. State contracts with probation, DUI/drug courts, research funding, block grants, state children's health insurance programs, and the Office of Children and Family Services are necessary for the sustainability of the Matrix IOP Model.
4. National contracts with Medicare/Medicaid, HUD, Veterans Administration, Department of Labor, block grants, HIV/AIDS resources, and the Department of Education serve as additional funding sources. Such contracts are critical to the success of the Matrix Model program (Taylor-Powell, Steele, & Douglah, 1996).

Uncovering Participant Barriers

Rapp and colleagues (2006) note that barriers to treatment stem from both the substance abuser's lifestyle and substance abuse treatment agency. Barriers identified by Rapp et al. (2006) and considerations based on these barriers are identified below:

1. The mechanisms of funding for the Matrix Model IOP program must be investigated. The participants' ability to afford a Matrix Model IOP, as discussed must be carefully considered for Matrix Model IOP. Factors that provide additional treatment opportunities for participants and organizational support include an agency's ability to obtain state or federal funding, the ability to receive grants that help underserved participants receive treatment, secure and maintain the appropriate credentialing status (CARF, Matrix Model) to receive funds and reimbursements, bill the Matrix Model IOP curriculum as an office-based or facility-based provider, deliver SAT by trained Matrix Model clinician, engage in linkage agreements with other community

based substance abuse providers, and become credentialed with public and private health care insurance companies that pay for IOP evidence-based SAT services.

2. There is a negative psychological stigma for people seeking help who live in rural and remote regions (Stamm, 2003). For many individuals, asking for help is difficult due to the self-determined attitude of the rural mentality. In many cases, going for help is a perceived sign of weakness and embarrassment emerges and presents as a barrier for rural residents to engage in a highly manualized, structured, and social oriented IOP such as the Matrix Model. Careful consideration should be taken into account regarding the rural cultural context when deciding between the Matrix Model IOP and other less invasive or intense models (TAU).
3. Alaskan work conditions and schedules are important considerations given the rigid treatment schedule required when operating a Matrix IOP Industry such as mining, oil, and fishing make up the economy of the Interior. These jobs require long hours and time away from home often conflicting with the traditional IOP model of 9 or more clinical contact hours per week.
4. The flexibility for adaptations and modifications is a concern when considering Matrix IOP implementation. The Matrix Model protocol requires strict fidelity to the manualized treatment approach. The research findings are based on specific treatment dose and to replicate treatment, fidelity to the manual needs to be upheld. The Matrix Model has been adapted to a variety of contexts. However, agency personnel are advised to carefully consider the impact of attempts to modify the treatment protocol, particularly if they desire outcomes similar to past Matrix Model research studies. When considering adaptations and more complex modifications to culture (Alaska

Native, White Rural Alaskan, and military) and context (work conditions and schedules), an agency should assess the resources required to make the modification or adaptation since flexibility of the Matrix Model is limited. The deciding factor to adapt or modify the Matrix Model is dependent upon the agency's resources and ability to conduct research. If such cultural or contextual modifications are necessary, an agency may very well determine that TAU is more feasible.

5. Environmental factors, such as extreme weather conditions, strains participant's social support systems due to isolation, transportation issues, child care problems, past failed treatment attempts, and poor treatment availability. These factors should be explored when determining the Matrix Model versus TAU.

Defining Desired Program Outcomes.

Desired program outcomes or goals should be carefully analyzed when considering if the Matrix Model or TAU is the best fit for an agency. Many times, for an agency to receive external funding from federal, state, or local subsidies, the agency needs to show outcomes. If an agency would like to have a program model that has history of positive outcomes, ease of measurability, portability, and useful biological markers (weekly urine analysis and schedule tracking) that is incorporated throughout the entire treatment process, the Matrix Model would be a superior fit over other TAU programs.

Finally, if tracking and documenting intakes, treatment plans, client-status reviews, client notations, and discharge planning, which is required by private and public insurance companies and stakeholders, the Matrix Model may prove to be superior over TAU. The Matrix Model has readymade treatment protocols, forms, and a treatment manual that follows the client throughout the duration of substance abuse services. Since the Matrix Model protocol utilizes tracking and

documentation as part of the curriculum, it simplifies the process of recording client engagement, progress, and recovery milestones. This feature of the Matrix Model enables the agency meet the goal of providing the best treatment for their clients by utilizing a measurable protocol within the framework of the model. Thus, if such protocol, manualized treatment, and portability are necessary, an agency should consider the Matrix Model over TAU.

Product Description

This project's product consists of three essential tools to guide agency personnel in exploring the feasibility, suitability, and practicality of implementing the Matrix Model or TAU. The first tool introduces an example of a program action – logic model for agencies to use when considering the implementation of the Matrix IOP model (Appendix B). The logic model is explained above was developed and adapted from the University of Wisconsin- Extension (2010). This program action plan is useful in helping agencies define their organization; examine their philosophy, requirements, resources, intended services, desired outcomes, and overall goals. In addition, there is a blank program action – logic model (Appendix C), which is useful for an agency to use when determining readiness and feasibility for Matrix Model implementation.

The second tool, which was developed as a result of this project's research, consists of five cyclical decision matrix diagrams that extrapolates salient data from the program action–logic model to help assess the readiness and feasibility of the implementing the Matrix Model. In addition, the decision matrix diagrams will provide guiding questions adapted from the Community Readiness Model (Plested et al., 1999) and key points that will help agency personnel determine if the Matrix Model is a good fit for their agency or if TAU is deemed more appropriate.

Finally, the third tool offered and developed as a result of this project's research consists of a process flow chart designed to guide an agency with making a decision of whether to implement the Matrix Model or TAU. The flow chart was derived from conceptualizations of the program action–logic model, participant observation, the cyclical decision matrix, guiding questions, and key points. This flow chart outlines the essential decision making elements including philosophical compatibility, agency requirements, outcome needs, participant barriers, funding feasibility, and agency resources. The three tools offered in this project provide agency personnel with the resources to attend to the vital considerations in selecting the best type of program model for delivery substance abuse treatment services in a rural context.

Future Directions

This project illuminates both the benefits and limitations of Matrix Model IOP implementation in remote, Interior Alaska. Indeed, the aim of this project was to examine literature regarding IOP implementation in rural/remote regions, and provide tools for agencies in remote Alaskan settings to use in determining the feasibility of Matrix Model implementation. In addition to the tools this project provides, it also aims to stimulate further action research regarding Matrix Model IOP implementation in remote Alaska. This study has identified the contextual variables that present as barriers for Matrix Model IOP substance abuse treatment service delivery in remote settings. Further applied research is necessary to develop novel ways to successfully deliver Matrix Model IOP treatment services within a remote Alaskan context. Such research could provide strategies for reducing the impact of the barriers to SAT services that residents face in remote settings. One hypothesis is to provide a modified version of the Matrix Model and offer Matrix Model informed care. This model would be categorized as TAU, but informed by the Matrix Model without all the stringent protocols in order to meet the needs of workforce and diverse cultural groups. A second area of future research and development

involves shifting the paradigm from an imported Matrix Model treatment protocol to a place based treatment model that prepares local providers to deliver a modified Matrix Model IOP. This new model could be based on the local community's identification of the problems, treatment interventions, and desired treatment outcomes. This method empowers the local people by allowing them to understand the problem, frame their own desired outcomes, and define their own baseline for treatment success from their unique cultural lens, which might differ from Matrix Model perspective.

Another novel concept that needs to be researched is delivery methods that incorporate tele-health and work-site satellite SAT programs. This hypothesis takes the stance that if workers cannot attend IOP onsite at an agency, then satellite Matrix Model IOP's could be developed and be effective if brought to the worker's location. This model could be beneficial since many North Slope workers cannot attend a traditional IOP schedule. This satellite IOP delivery method could also be considered for other industries with workers who cannot attend onsite IOP. Furthermore, policy regarding insurance payment for SAT needs to be explored. Distance delivery tele-health and worksite IOP services could provide options and solutions for remote Alaskan workers who are in need of IOP services. Lastly, state policy regarding SAT funding to agencies for IOP services needs to be revamped. The well documented need of SAT within the Interior and other remote areas of Alaska provide the basis for action oriented research mandating the State of Alaska to make provisions regarding their current substance abuse treatment policy. Finally, it calls for support for agencies to provide and deliver evidence-based SAT within the context of Alaska's unique demographical and geographical milieu.

Conclusion

Substance abuse is one of the Interior region's most serious problems (Horwath, 2013). The remoteness of Fairbanks has put a strain on the options, availability, and delivery of treatment services for those individual in need. Residents of Fairbanks often need to leave the area for substance abuse treatment due to the lack of resources, long waitlists, and basic unavailability of services (Horwath, Gifford, & Ford, 2014). IOP treatment can serve as an alternative to inpatient services. TAU includes a variety of IOP programs that are not listed on the NREPP as a validated treatment. Contrary, the Matrix Model is listed as the only NREPP IOP treatment for substance abuse and considered the gold standard for IOP substance abuse treatment. However, due to Fairbanks's remoteness, it is hypothesized that the region may have contextual and cultural considerations that must be investigated before program implementation (Horwath et al., 2014). As a result of such contextual considerations, it is important that agency personnel thoroughly examine the type of model (Matrix or TAU) that is most feasible for their organization in terms of the agency's readiness for implementation and the treatment model's compatibility with the agency and other stakeholders. This project provides resources to help guide an agency in the decision making process when considering the Matrix Model versus TAU.

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Appendix/Product Table of Contents

Appendix A

Agency Guidebook for Selecting Matrix Model Versus Treatment as Usual

The following guidebook serves as a resource for agency leadership to utilize when making important decision about implementing the Matrix Model versus Treatment as Ususal TAU. This guidebook utilizes a foundation provided by the University of Wisconsin- Extension (2010).

This guidebook is focused on 1) providing a method for agency personnell to asess factors affecting Matrix IOP imlementation ; 2) articulating a method for setting and exploring priorities ; 3) introducing an action plan to assess the investments required for the Matrix Model to illuminate what the Matrix Model will do, and who the Matrix Model will reach; and, 4) providing cyclical decsion matrix diagrams that include guiding questions and key points to examime model-agency fit.

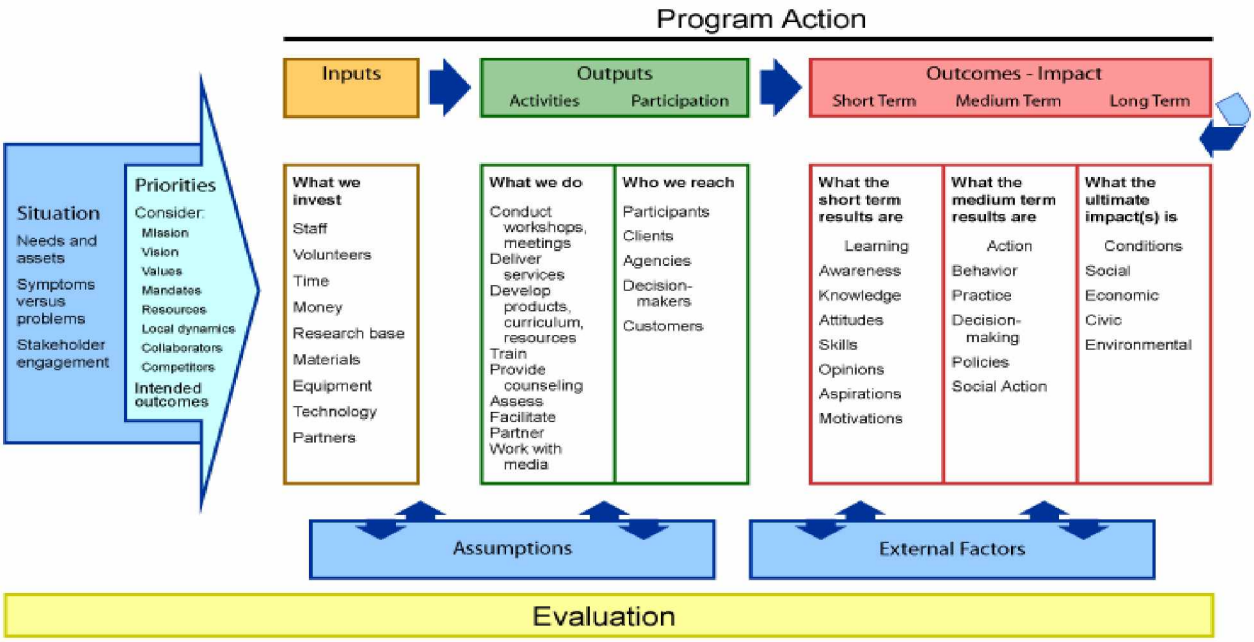
In adition, a flow chart has been developed that serves as a tool for determining the feasbility and readiness of an agency to pursue Matrix Model implementation. This flow chart guides agency personnel who are considering implementing an IOP substance abuse program with determining if the Matrix model or TAU is the best fit for their agency. Lastly, this guidebook offers the necessary tool and resources for agencies in the Interior Alaska to determine the compatibilty, readiness, and overal feasability of implementing the Matrix Model IOP versus TAU.

Appendix B

Agency leaders are tasked with making difficult decisions regarding program implemtation period. As such, the Program Action Logic Model developed by Taylor-Powell, Steele, and Douglah (1996), is the first tool in this guidebook to assist agency leadership with program implementation . In Appendix B, a diagram of this model is provided. It demonstrates the process of planning for program implemenation. It can be used as a road map for an agency to use as they consider factors to new program implentation.

When using this model, agency leaders are encouraged to identify the needs and situations that they face. The model requires a thorough examination of the investments the agencey will need to make in order to successfully offer services, as well as the stakeholders they intend to reach with their services. A clear understanding and articulation of the the intended program goals is also emphasized when using this tool. In sum, the most important consideration illustrated by this model includes the priority alignement between the agency and new program, which requires exploring the philosophical compatibility. An example of a planning sheet based on this model is provided in Appendix B and a blank planning sheet is provided in Appendix C.

Appendix B continued



*Adapted from the University of Wisconsin- Extension (2010)

Providing education and awarness of the need for Substance Abuse Treatement (SAT) is an example of a short term impact, delivering evidenced-based treatment is a example of a medium term impact, and lessening social stigma and SAT conditions are examples of the long term impacts of the Matrix Model.

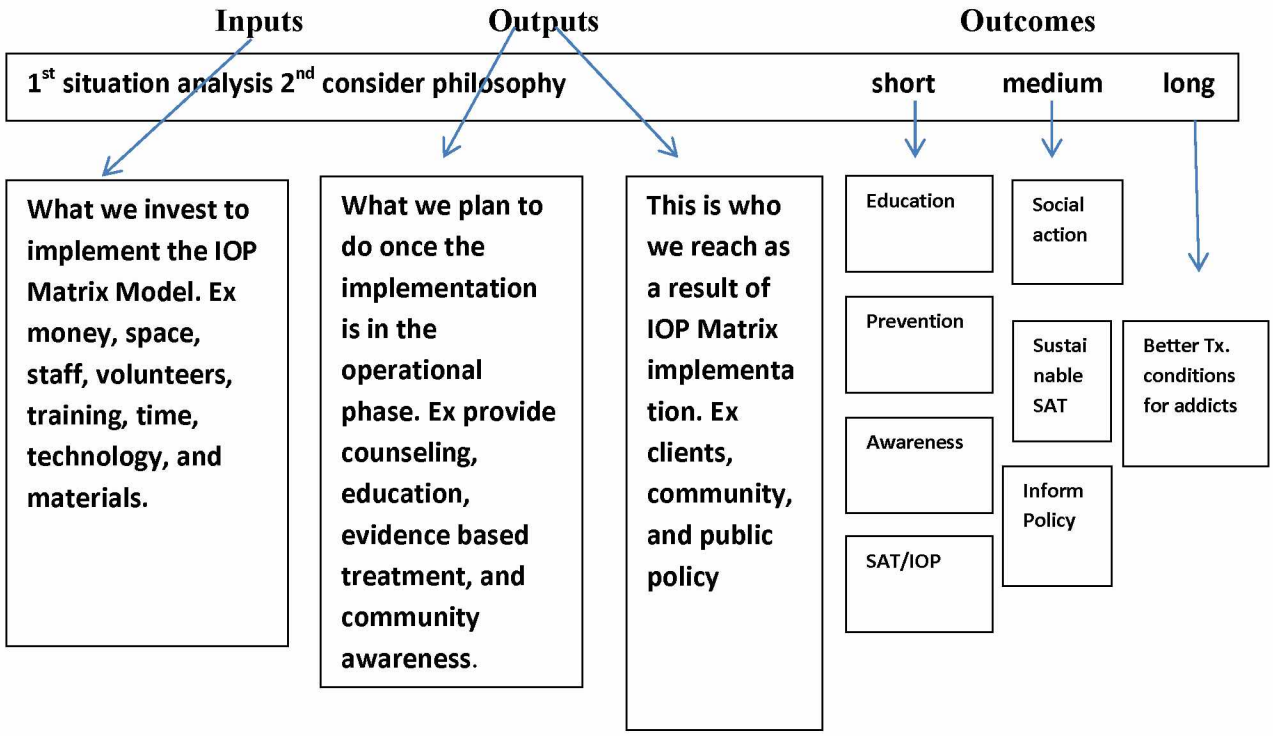
Appendix C

Below is a example of a completed Matrix IOP Program Action-Logic Model, which demonstrates how an ageny would use this tool to guide their planning and decision making processes. The steps involve:

1. *Analyzing Situation/Needs*: Agency leaders examine the needs, assets, problems, and overall agency investment in the implementation. In order to complete this step, agency personnel must consider the investments that will need to be made when developing a SAT program, specifically selecting between the Matrix Model and TAU. These investments are known as inputs, which are depicted in the diagram below.
2. *Assessing Priorities*: Agency leaders examine the compatibility through assessing agency–model philosophy and fit. In order to complete this step, an agency needs to determine the philosophy that influences the agency dynamics. An agency can unpack their philosophy by examining mission, values, and the vision statement.

Appendix C continued

Program Action – Logic Model: A Method of Using Logic to Plan for Matrix Model IOP Implementation



Assumptions: ideas or beliefs about IOP

External Factors: outside influences on IOP

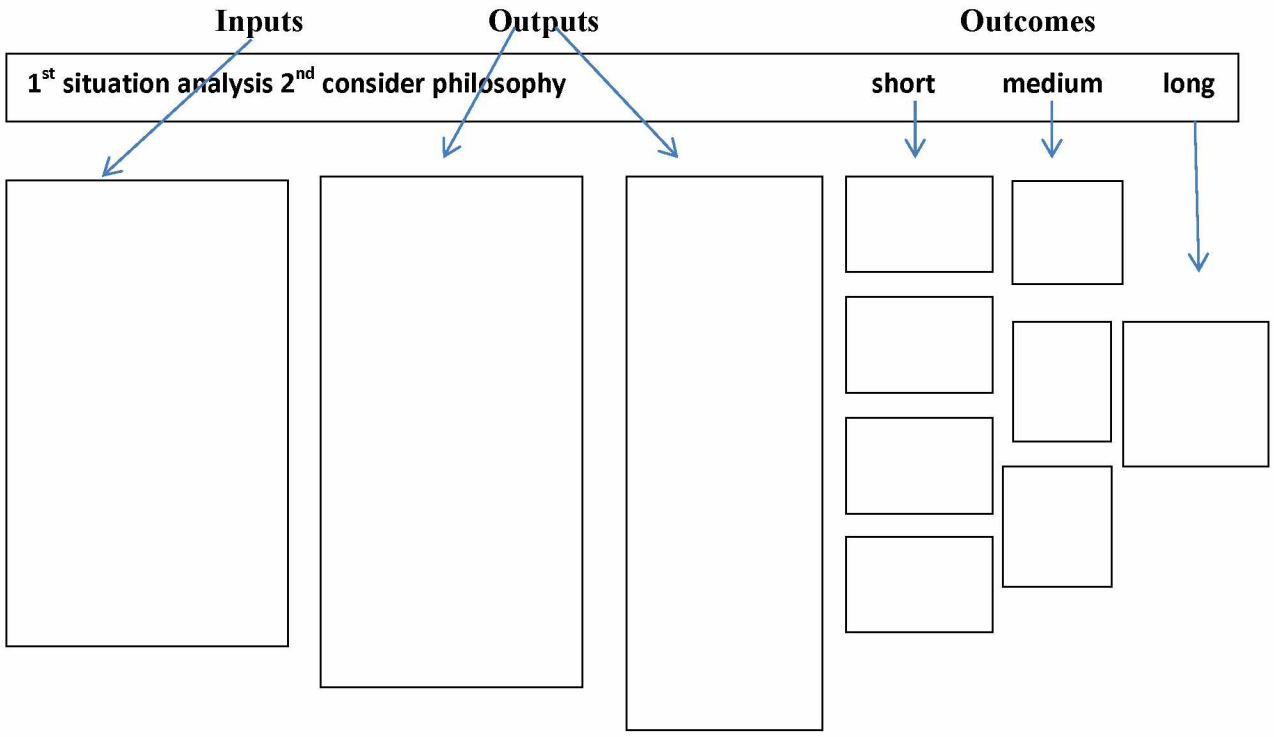
Appendix C continued

Below is a Blank example of a Matrix Model IOP Program Action-Logic Model to guide your agency's planning.

1. *Situation/Needs Analysis*: Examination of the needs, assets, problems, and overall agency investment in the implementation.

2. *Priorities*: Examination of compatibility through assessing agency–model philosophy.

Program Action – Logic Model: A Method of Using Logic to Plan for Matrix Model IOP Implementation



Assumptions: ideas or beliefs about IOP

External Factors: outside influences on IOP

Appendix D

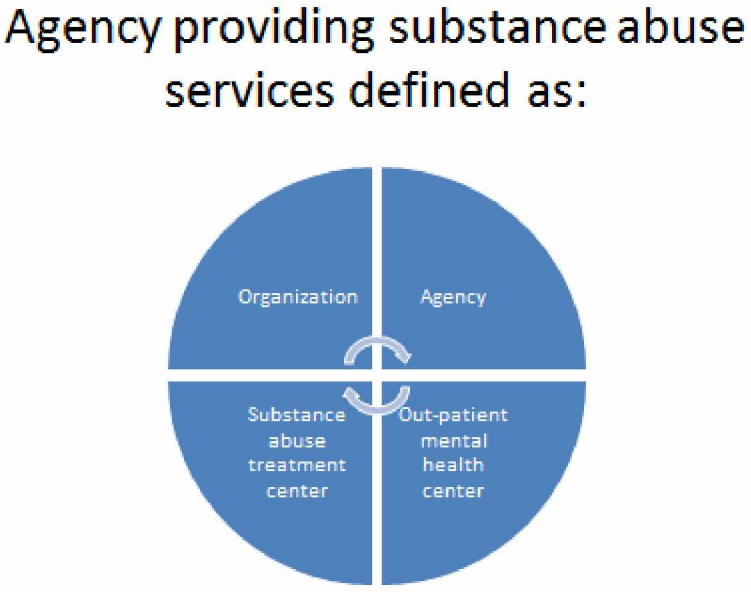
After completing your agency program action-logic model, the next step is to use the information from the program action-logic model and further assess implementation by using the 5 cyclical design matrix diagrams that have been developed as a result of this research.

Once agency leaders are familiar with data extrapolated from the logic model and have assessed their agency's potential inputs, outputs, and outcome goals using the program action-logic model, they are ready to begin examining the agency's readiness to pursue potential IOP SAT. To aid in this process, cyclical decision matrix diagrams have been developed with guiding questions adapted from the Community Readiness Model created by Edwards et al. (2000). Furthermore, the 5 decision matrix diagrams include key points that stimulate thought regarding feasibility and readiness of the Matrix Model IOP implementation. Each diagram should be utilized to help agency leaders facilitate thought, discussion, and decisions regarding the feasibility and readiness of implementing the Matrix Model.

Please consider the following guiding questions:

Guiding Question # 1. How does your agency support the efforts of substance abuse treatment?

Diagram (1) operationalizes a business structure that adapts a SAT program.



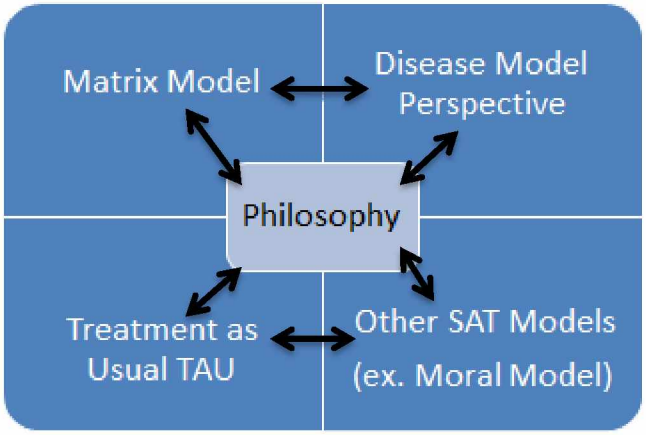
These definitions are suitable for both Matrix model and Treatment as Usual (TAU). TAU is operationalized as any other substance abuse treatment model other than Matrix Model. As you plan, consider the following key points to help operationalize your business structure, and determine if your agency needs to be able to produce outcome data to comply with grant or other funding regulations.

Key points: 1) Defining the business structure based on the type of organization, agency, outpatient mental health center, or substance abuse treatment center. This is the first step in understanding how the Matrix Model IOP will fit. 2) The Matrix Model IOP treatment provides mechanisms to measure outcomes through its manualized treatment protocol. A business, with

the appropriate structure and resources that fit the Matrix Model IOP, has the opportunity to participate in outcome research associated with the model.

Guiding Question #2: Are there circumstances, attitudes, or beliefs in your agency which view addiction as a moral issue and a worldview that purports people struggling with addiction should not be tolerated, rather they should be treated criminally?

Diagram (2) illuminates philosophical alignment between SAT model and philosophical perspective.



As you plan, consider the following key points to help assess if your agency's philosophy is compatible with the Matrix Model.

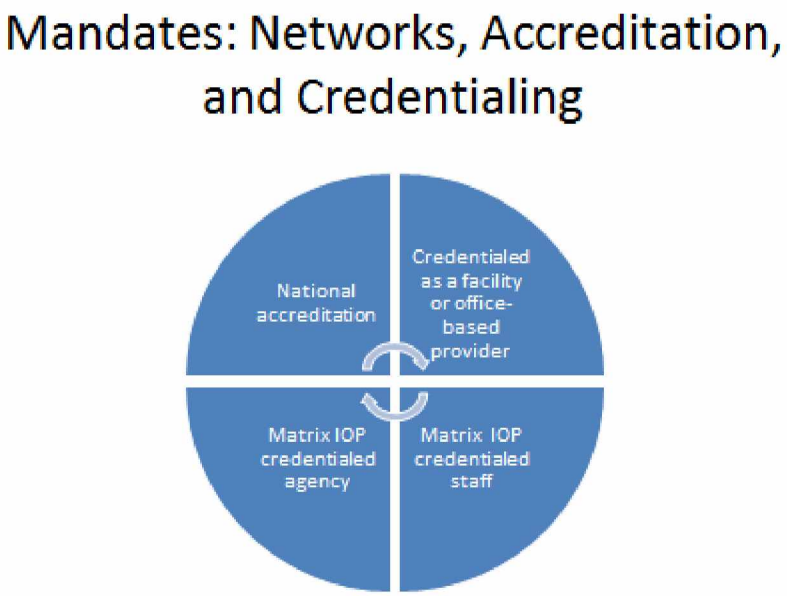
Key points: 1) The Matrix Model closely aligns with the disease model of addiction. 2) The disease model views addiction in a medical/biological context that requires treatment. 3) It is important for agency leadership to consider the views of agency personnel on addiction. If the

agency and its staff view addiction as a moral dilemma, the agency should consider a TAU model that fits their agency mission and values.

Appendix D Continued

Guiding Question # 3: What stakeholder requirements and state policies regarding the provision of substance abuse treatment services are in place that may affect Matrix IOP implementation?

Diagram (3) illustrates the various accrediting and credentialing bodies that your agency may need to consider in terms of implementing the Matrix Model versus TAU.



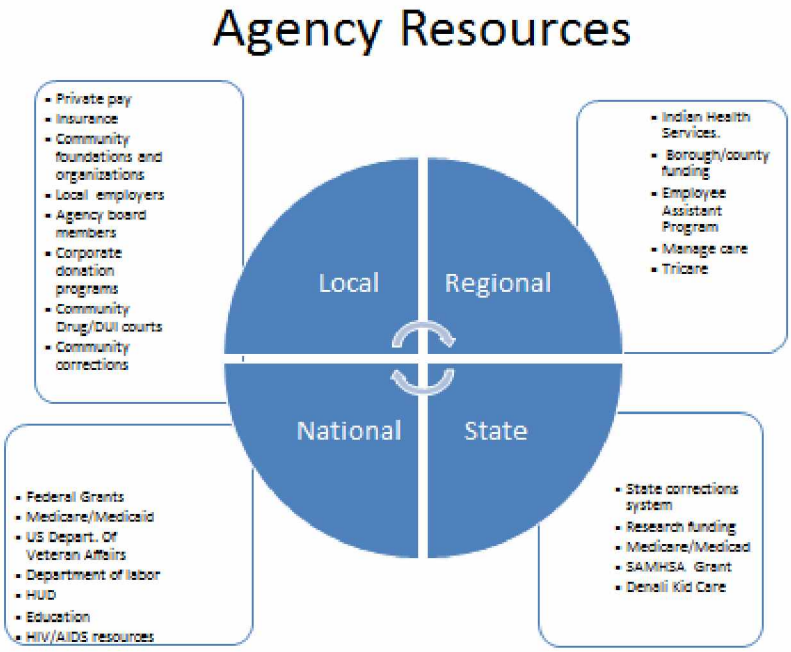
Your agency will be impacted by accreditation and credentialing. Please consider the following key points as your explore options related to the Matrix Model versus TAU.

Key Points: 1) Many states require national, state, or local accreditation for an agency to provide substance abuse treatment. Alaska requires agencies to be nationally accredited to provide IOP services. For example, CARF is an entity providing accreditation to SAT centers. 2) Consider if IOP is /will be billed as a facility or as an office based provider. An agency credentialed and

licensed as a facility typically retrieves payment for services at a higher rate, is eligible for grants, and reimbursable among insurance plans. 3) It is important to know if local mandates require Matrix trained IOP/addiction counselors to provide services, and if mandates require the Matrix Model IOP within an agency to be credentialed by the Matrix Institute as a Matrix Model authorized treatment site. Financial considerations are imperative given the high costs associated with accreditation and credentialing.

Guiding Question # 4: How are current SAT efforts funded? Is this funding enough to sustain a Matrix Model IOP?

Diagram (4) provides examples of potential funding/resources that an agency may obtain from local, regional, state, and national sources.

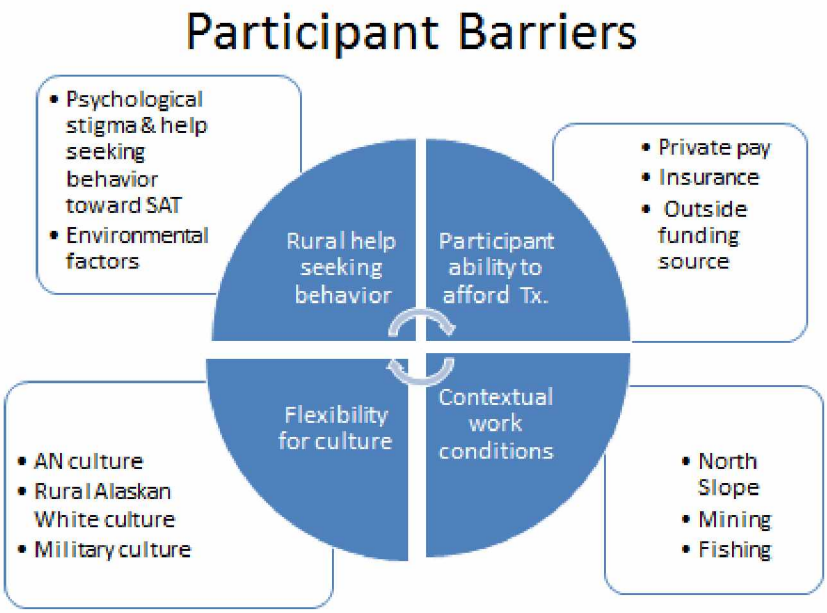


When planning to implement an IOP an agency needs to consider where and how they receive funding and resources.

Key points: 1) IOP funding should come from diverse sources such as: private pay, insurance, federal funds/grants, state funds/grants, local funds/grants, and foundations. 2) Funding from diverse sources provide security for IOP sustainability because if one source stops then the IOP can sustain itself from other sources.

Guiding Question # 5: What are the primary obstacles to addressing participant barriers in your agency?

Diagram (5) provides examples of participant barriers to SAT and is provided to help your agency think about solutions to such barriers.



When considering Matrix IOP an agency needs to assess what barriers exist that their client will face when seeking Matrix Model IOP.

Key points: 1) Help seeking behavior and psychological stigma should be considered when determining feasibility of the Matrix Model in the Interior region of Alaska 2) The financial demographics of participants should be considered. For example, do participants have the ability to pay for treatment either by private pay, insurance, or other forms of external funding sources?

3) An agency needs to consider their cultural flexibility in adapting the Matrix IOP manualized treatment to fit Alaska Native contexts. 4) The work conditions of your participants need to be considered. For example, people in Fairbanks work in the oil, mining, and fishing industries with work schedules that cause them to be unavailable for a typical Matrix Model treatment schedule. Thus, agencies need to consider schedule conflicts that could occur as a result of long work hours and jobs that take employees out of town for weeks at a time. In addition, the weather conditions in Fairbanks may affect participant engagement because of transportation complications to and from treatment. The Matrix Model requires 9 plus hours weekly, often meeting 4-5 days per week. It is important to consider the impact of a schedule of that intensity and the effect on participants' engagement in treatment with unique work schedules, weather conditions, travel requirements, and environmental considerations.

Appendix E

Process Flow Chart Instructions

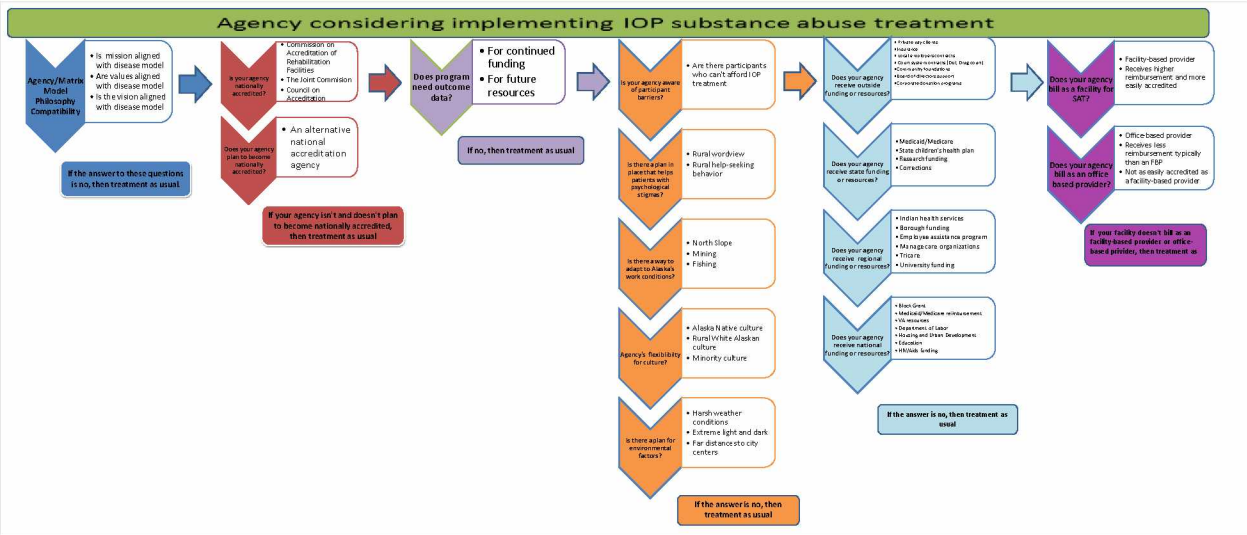
This next and final tool developed as a product of this research, a flow chart, provides agency leadership with a method to process the feasibility and readiness of implementation of the Matrix Model or TAU.

The process flow chart (Appendix F) was developed as a result of the findings associated with this project. This tool allows agencies to assess the compatibility, readiness, and feasibility associated with the Matrix Model versus TAU. Agency leaders can use the flow chart to assess the model-agency fit by following the top arrow down the model. The dialogue boxes to the right of each arrow provide scenarios, which facilitate assessment of Matrix Model's feasibility. As the arrow moves downward, it provides suggestions for implementing the Matrix Model or TAU. The chart is color coded to delineate between the domains of vital considerations. Proceeding from left to right, the chart is linear, as it progresses with each colored arrow representing a new domain of assessment. Once the Matrix Model suggestion at the bottom of the arrow (located in the color coded box at the bottom of the arrow chart) has been given, the arrow to the right guides the user to the next domain in the chart moving toward choosing Matrix Model, or it halts progression and recommends TAU. The chart is color coded as follows:

1. Blue – philosophical compatibility of agency/Matrix Model.
2. Orange – Alaska accreditation standards for providing SAT.
3. Gold – considerations regarding outcome data for resources and funding.
4. Green – assessment of the participant barriers.
5. Light blue - examination of program funding and resources (sustainability).
6. Purple – exploration of the organization and billing structures.

Appendix F

Process Flow Chart



Appendix G

Conclusion

This guidebook serves as a helpful tool for agencies considering the Matrix Model IOP, specifically in remote Alaska. It provides three tools. The first tool provided is a program action-logic model which an agency might find helpful to assess its needs, priorities, investments, intentions, and goals. The second tool that is provided consists of 5 cyclical decision matrix diagrams which help stimulate agency leadership's thought, discussion, and assessment regarding pertinent agency information and philosophical underpinnings illuminated by applying the logic model to the agency. Finally, the last tool, a process oriented flow chart, supports agency leadership in the decision process when choosing between the Matrix Model IOP versus TAU.

Appendix H

References

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